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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,764	10/22/2001	David A. Markle	3521.162	3825

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EXAMINER

BROWN, KHALED

ART UNIT PAPER NUMBER

2851

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/035,764

Applicant(s)

DAVID MARKLE

Examiner

Khaled Brown

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9-11,13-16 and 18-28 is/are rejected.
- 7) ☒ Claim(s) 7,8,12 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-4,6,11,14,18-21,24,27 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Sandstrom (US 6399261).

Re clms 1,6,11,14,20,21: Sandstrom discloses a method of A method of fabricating micro devices from a workpiece, comprising: illuminating a single column of micro device cells on a mask with pulses of radiation; and patterning the workpiece with images of the illuminated single column to form corresponding adjacent columnar exposure fields by continuously moving the substrate in the direction perpendicular to the long axis of the columnar exposure fields during illumination of the mask so that each columnar exposure field is formed by a single pulse of radiation (Col 7 lines 19-35).

Re clm 2: projection lens (Col 11 line 67)

Re clm 3: alignment (Col 13 lines 1-7)

Re clm 4: pulsed radiation (Col 10 line 19)

Re clm 18: illumination field stop (Col 10 line 62 pupil filters act as field stop)

Re clm 19: adjusting illumination system elements (Col 10 line 54-Col 11 line 6)

Re clm 24: Sandstrom discloses a system for patterning a workpiece to form micro devices in a manner that reduces colinearity effects, comprising: a radiation source for providing pulses of radiation (602), a radiation source controller in operation communication with said radiation source for controlling the emission of the radiation pulses from said radiation source (Col 7 line 54), an illuminator arranged to receive pulses of radiation from said radiation source and illuminate a single column of micro device cells on a mask (Col 10 line 59), a projection lens arranged to receive pulses of radiation passing through the mask and adapted to form a columnar exposure field of micro device units that corresponds to the column of micro device cells on the mask (604, Col 11 line 67), a workpiece stage capable of supporting the workpiece and moving the workpiece over a scan path relative to the projection lens and in a direction normal to the projected direction of the column on the workpiece (605) and a workpiece stage position control unit in operable communication with said workpiece stage and in communication with the radiation source control unit, wherein said workpiece stage position control unit controls the movement of said workpiece stage over said scan path such that a single pulse of radiation forms a single columnar exposure field, with temporally adjacent radiation pulses forming adjacent columnar exposure fields (Col 7 lines 19-35).

Re clm 27: air bearing stage (Col 12 line 24)

Re clm 28: pulse stabilization system (the beam scrambler and coherence control stabilizes the pulse Col 9 lines 59-61)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5,9,15,16,22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom (US 6399261).

Re clms 5,9,15,16,22,25: Sandstrom discloses the claimed invention except for the range values claimed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the range values for the apparatus of Sandstrom to the claimed values, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom (US 6399261) in view of applicants admitted prior art.

Re clm 23: Sandstrom discloses the claimed invention except for disclosing the slicing of the wafer after the wafer has been exposed. Applicants admitted prior art discloses that after exposing a wafer it should be sliced (Spec p.2 lines 8-10) because this is one of the normal steps following the exposure process in micro device fabrication.

Therefore it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to slice the wafer of Sandstrom following its exposure as disclosed by applicants admitted prior art because this is one of the normal steps following the exposure process in micro device fabrication.

Claims 10,13 and 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom (US 6399261) in view of Takiguchi (US 6191843).

Re clms 10,13: Sandstrom discloses the claimed invention as noted above including stating that its invention is applicable to fabricating semiconductor devices (Sandstrom Col 1 line 13). However, Sandstrom does not specifically disclose fabricating a thin-film head. Takiguchi teaches that an invention applicable to fabricating semiconductor devices can also be applied to fabricating thin-film heads (Takiguchi Col 10 lines 36-42) to increase the variety of areas where an invention can be applied (Takiguchi Col 10 line 32). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the invention of Sundstrom to fabricate a thin-film head because it would increase the variety of areas where the Sundstrom invention could be applied as taught by Takiguchi.

Re clm 26: magnetically levitated stage (Takiguchi Col 10 line 64)

Allowable Subject Matter

Claims 7,8,12,17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose or suggest the limitations of "the mask contains multiple columns of micro device cells and including the step of adjusting the illumination to illuminate only a single column of micro device cells" or "the electrical test structure to assist in controlling a lapping operation" in conjunction with the rest of the claimed subject matter.

Note: a signed copy of the IDS filed 4-8-02 p. 4 is attached to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khaled Brown whose telephone number is 703-306-5738. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

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Art Unit: 2851

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KB
December 12, 2002

A handwritten signature in black ink, appearing to read "Russell Adams", with a stylized flourish at the end.

RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800